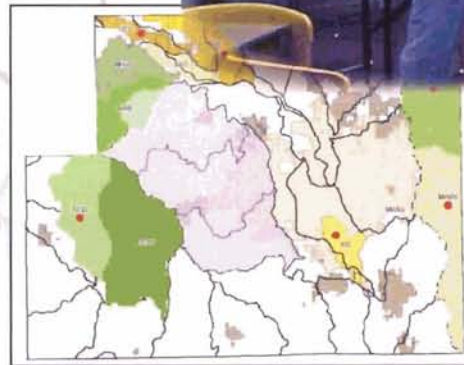




**FINAL  
REPORT**  
December 2005

# Floodplain Management Task Force

*A Work in Progress*



# **Floodplain Management Task Force Final Report**

***A Work In Progress***

Prepared by:

The Floodplain Management Task Force

Under the Authority of:

Joint Sedgwick County/Wichita City Manager

December 2005

# Task Force Members

## Appointees from City/County

### *Co-Chairs*

David Spears, P.E.	Director of Public Works, Sedgwick County
Chris Carrier, P.E.	Director of Public Works, City of Wichita

### *Members*

John Schlegel, AICP	Director of the Metropolitan Area Planning Department
James Weber, PE.	Deputy Director of Public Works, Sedgwick County
Carolyn McGinn	Senator, Senate District 31
Bob Martz	Wichita City Council Member
Scott Lindebak, P.E.	Stormwater Utility Engineer, City of Wichita
Irene Hart	Director of Community Development, Sedgwick County
Robert Parnacott	Assistant County Counselor

## Appointees from Other Governmental Bodies

M.S. Mitchell	Planning Commissioner, Metropolitan Area Planning Commission
Jack Whitson	Sedgwick County Association of Cities Member (City of Park City)

## At-Large Appointees

Wess Galyon	Wichita Area Builders Association
George Sherman	Slawson Companies
Jay Russell	J. Russell Communities
Chris Bohm, P.E.	Ruggles and Bohm, P.A.
Jim Skelton	Wichita City Council Member
John Hastings	Licensed Geologist, Resident of The Dell

## Ex-Officio - State and Federal Officials

*(Contributed knowledge and expertise)*

Debra Baker	State Water Planning Unit, Kansas Water Office
Don Snethen	Watershed Management Section, Kansas Dept. of Health & Environment
Richard Basore	Watershed Management Section, Kansas Dept. of Health & Environment
Jim Putman	US Geological Survey
Julie Grauer	Kansas Division of Water Resources
Joe Remondini	US Army Corps of Engineers

# Jurisdictions and Districts

## County

Sedgwick County

## Municipalities within Sedgwick County

Andale	Haysville
Bel Aire	Kechi
Bentley	Maize
Cheney	Mount Hope
Clearwater	Mulvane
Colwich	Park City
Derby	Sedgwick
Eastborough	Valley Center
Garden Plain	Viola
Goddard	Wichita

*(Please note that the phrase "all jurisdictions," used throughout this document, refers to Sedgwick County and all cities within Sedgwick County)*

## Watershed Districts within Sedgwick County

Andale Watershed #9  
\*Spring Creek Watershed #16  
\*Whitewater River Watershed - Butler County  
Clear Creek Watershed #30  
Mount Hope Watershed #54  
\*Middle Walnut River Watershed - Butler County - levy every other year

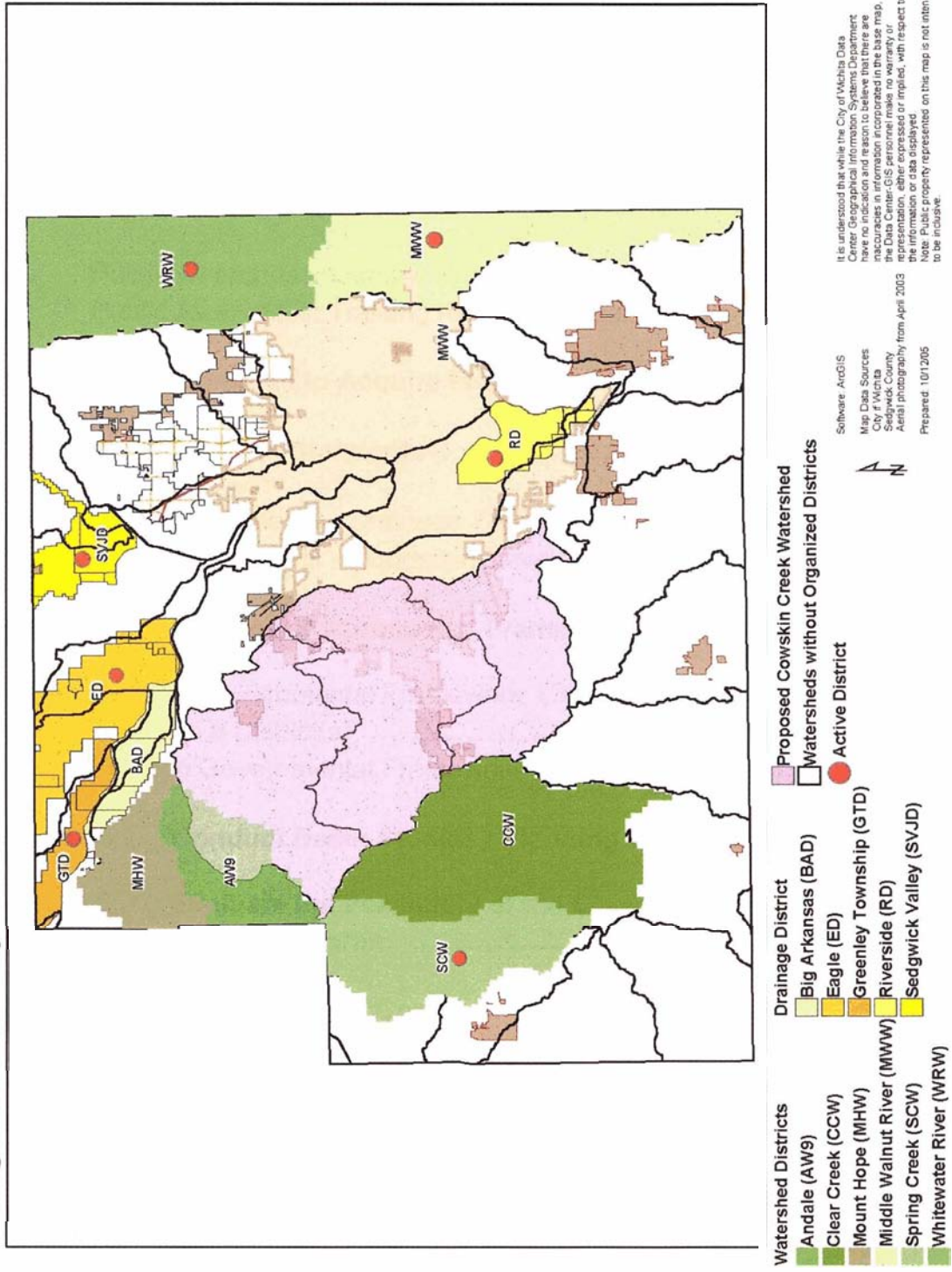
Proposed Cowskin Creek Watershed District

## Drainage Districts within Sedgwick County

Big Arkansas Drainage District  
\*Eagle Drainage District  
\*Greeley Township Drainage District  
\*Riverside Drainage District  
Sedgwick-Sumner Drainage District  
\*Sedgwick Valley Drainage District

**(\*Indicates an active district)**

# Sedgwick County Watershed and Drainage Districts



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## Background

The Floodplain Management Task Force was formed in January 2005 with a charge to evaluate current policy and practice of regulating development within floodplains and to make recommendations of any needed change in policy and practice to the Sedgwick County Board of Commissioners and Wichita City Council. In developing recommendations, the Task Force incorporated concerns regarding development within floodplains and the reduction of present and future flood hazards. Business, environmental, and neighborhood interests were taken into account.

The Task Force researched information regarding watersheds, flood zones, and best management practices of other communities with similar concerns, including presentations from the Denver Urban Drainage and Flood Control District, the Johnson County Stormwater Management Program, and the Andale Chamber of Commerce's proposed watershed district. In addition, Rhonda Montgomery, the National Flood Insurance Program (NFIP) Coordinator for the State of Kansas, presented information to the Task Force regarding the Federal Emergency Management Agency's Community Rating System Program—an incentive program for communities to improve floodplain practices and for NFIP policyholders to receive a premium discount based on a level of credit granted to municipalities/counties for implementing mitigation projects. In addition, Mr. Jack Whitson surveyed each city in Sedgwick County to obtain information regarding their existing policies and willingness to adopt a countywide policy.

After deliberation, the Floodplain Management Task Force determined that short-term, mid-term, and long-term initiatives should be established according to a variety of factors:

1. Short-term Initiatives establish the ability to implement specific action items with current limited resources, yet produce potentially immediate and beneficial impact on existing and future developments. (Begin within 12 months)
2. Mid-term Initiatives develop the necessary capacity to plan, develop, and implement a Countywide approach to drainage and floodplain management issues. (Begin within 1-3 years)
3. Long-term Initiatives are projects identified and determined as important in terms of reducing the risk of property damage and potential loss of life as a result of flooding. (Begin within 3 years or longer)

The Task Force has identified, discussed and developed the following recommendations. In July, a progress report was distributed to the City Manager and the County Manager for review. On November 1, 2005, a presentation was made to the Wichita City Council and the Board of County Commissioners during an en banc workshop. The Final Report was presented to the Advanced Plans Committee and the Metropolitan Area Planning Commission on December 8, 2005. The Floodplain Management Task Force is recommending that the Wichita City Council and the Sedgwick Board of County Commissioners accept the Final Report and direct the City and County Managers to work together to move the Report's recommendations forward.

## Summary of Initiatives and Charge Statements

Charge Statements		Short-Term	Mid-Term	Long-Term	Page
<b>Initiative #1a - Public Awareness: Identify, Notify, Educate</b>					
A. All jurisdictions should immediately identify existing flood-prone buildings/property, and notify and educate property owners about the flooding risk inherent on their property on an annual basis.		X			11-13
<b>Initiative #1b - Public Awareness: Training &amp; Re-Evaluating Policy</b>					
B. Sedgwick County Code Enforcement, with the assistance of the City of Wichita and the SCAC, will ensure that local floodplain managers, insurance agents, realtors, lenders, engineering and surveying associations in Sedgwick County have adequate opportunities for training on an annual basis.		X			11-13
<b>Initiative #2 - Continue to Acquire Flood-Prone Properties</b>					
A. All jurisdictions should develop or continue existing programs of buying older, developed flood-prone properties (land & improvements), where reasonable flood mitigation techniques will not solve severe/persistent flooding problems. SCAC will on an annual basis encourage all municipalities to participate in long-term buyout programs.		X			14-16
Short-Term = Begins within 12 months		Mid-Term = Begins within 1-3 years		Long-Term = Begins within 3 years or longer	



Charge Statements		Short-Term	Mid-Term	Long-Term	Page
<b>Initiative #3a - Uniform Standards: Drainage Technical Guidance Manual</b>					
A. The Floodplain Management Task Force will recommend representatives for the County and City Manager to appoint to a Technical Task Force within 3 months (from the date this report is adopted). The Technical Task Force will be charged with the responsibility to develop a <i>drainage technical guidance manual</i> that outlines uniform engineering practices and procedures for designing and checking the design of storm drainage systems under the rainfall and land characteristics typical of the Sedgwick County area. The manual will generally focus on water quantity concerns including conveyance, flow rates, and construction design parameters of stormwater systems for flood control. Storm control techniques should be evaluated and potentially included as an alternative or supplemental method to reduce runoff. The manual should be applicable for use by all jurisdictions, as a means of ensuring uniformity in drainage standards and approaches used throughout the County. The manual should be complete within 15 months.		X			17-19
<b>Initiative #3b - Uniform Standards: Floodplain Development Standards</b>					
B. The Technical Task Force will also be charged with developing a set of <i>uniform floodplain development standards</i> that should coincide with the development of the <i>drainage technical guidance manual</i> . These <i>uniform floodplain development standards</i> should provide a greater level of protection than the minimum standard as required by FEMA. The adoption of uniform standards for the region will help local governments create a level playing field for development and save design time for developers, while also enhancing the quality of future growth. The Technical Task Force will recommend the appropriate level of regulations needed to significantly reduce flood risks throughout Sedgwick County. These policies should be written in a format that allows the District(s) to approve the policies and then quickly distribute the <i>uniform floodplain development standards</i> , along with the <i>drainage technical guidance manual</i> , to each jurisdiction for consideration of adoption. The District (s) should encourage each jurisdiction to adopt the manual and policies within 6 months from the District's approval date.			X		17-19
Short-Term = Begins within 12 months		Mid-Term = Begins within 1-3 years		Long-Term = Begins within 3 years or longer	

Charge Statements		Short-Term	Mid-Term	Long-Term	Page
<b>Initiative #4a - Develop Governmental Framework: Organizing Committee to Establish a District(s)</b>					
A. Within 3 months of acceptance of this report, the County and City Managers will create an "Organizing Committee" for purposes of formally establishing an Urban Drainage and Flood Control District(s) or coordinating entity to ensure an area-wide approach to addressing the management of drainage and floodplain issues. The District(s) or coordinating entity should be formed within 2 years.		X			20-26
<b>Initiative #4b - Develop Governmental Framework: Permanent Funding Source</b>					
B. The Organizing Committee will identify options to develop a permanent funding source that is solely designated to address flooding issues throughout Sedgwick County within 18 months of the acceptance of this report. The Organizing Committee will encourage all appropriate parties to formally accept or adopt the permanent funding source option/recommendation within 3 years.			X		20-26
<b>Initiative #5 - Conduct Basin Studies/Planning</b>					
A. After formation of the Urban Drainage and Flood Control District(s) and permanent funding source, the District(s) should conduct a comprehensive study of the basins within Sedgwick County in order to further identify drainage problems, flood-prone areas and potential mitigation strategies.			X	X	27-28
<b>Initiative #6 - Evaluate the Feasibility of the Community Rating System Program</b>					
A. The County and City Manager should appoint within 3 months (of the acceptance of this report) a CRS Committee to continue efforts to evaluate the feasibility of participating in the Community Rating System as a method to improve floodplain practices and in order for NFIP policyholders to receive a premium discount.		X			29-30
Short-Term = Begins within 12 months		Mid-Term = Begins within 1-3 years		Long-Term = Begins within 3 years or longer	

Charge Statements		Short-Term	Mid-Term	Long-Term	Page
<b>Initiative #7 - Maintain Flood Conveyance Channels</b>					
A. Until the Urban Drainage and Flood Control District(s) is formed, each local jurisdiction should develop a plan of action for maintenance of flood conveyance channels as soon as possible.		X	X		31-33
Short-Term = Begins within 12 months	Mid-Term = Begins within 1-3 years	Long-Term = Begins within 3 years or longer			

## **Initiative 1 - Public Awareness**

### **Background**

The Floodplain Management Task Force recognized that the public is quite often not aware of flood risk associated with their property or how to take mitigative action to reduce their risk. Sedgwick County has already started an initiative to address this issue, for the County received funding in the amount of \$16,500 through the Kansas Division of Water Resources (through FEMA's Community Assistance Program-State Support Services Element) to conduct a floodplain education program. Sedgwick County committed \$6,666 as a match contribution. Sedgwick County has held workshops targeted for specific groups including, engineers, surveyors, mortgage brokers, and Wichita/Sedgwick County staff, and the Board of Realtors. In addition, the County identified, notified and provided educational opportunities for property owners that are within the 100-year floodplain throughout Sedgwick County. The Sedgwick County Department of Code Enforcement then hosted a Floodplain Management Open House to provide citizens an opportunity to visit with a variety of governmental and private agencies involved in floodplain management, flood safety, and post-flood relief.

Public awareness efforts are needed not only in Sedgwick County, but in all jurisdictions, on an ongoing basis in order to educate and encourage property owners to take action to reduce risk to their lives and their property, including their residence, business, agricultural land, etc. Information should be made available and/or distributed about flood hazards in their area, the benefits of having flood insurance, and how to retrofit their property to reduce future flood damage.

Another component, critical to this public awareness effort, is to not only identify and notify current property owners, but also potential buyers of property within the floodplain. Real estate agents, insurance agents, lenders, engineers, and surveyors often use different guidelines to determine whether a property is within or outside the 100-year floodplain; and therefore, many prospective property buyers are not informed correctly, or at all. Associations of each profession, as listed above, need to be contacted to encourage their members to attend floodplain management training sessions. Realtors, lenders, and insurance agents should be encouraged to incorporate floodplain/flood risk information into their work with their clients. With proper training, lenders may need to review their policies to ensure that flood insurance is required on appropriate properties as a stipulation during property transactions, not only to protect themselves, but the buyer as well. In addition, insurance agents need to promote awareness of the benefits of flood insurance to property owners within the 100-year floodplain that are currently not insured.

## Initiative #1a – Public Awareness: Identify, Notify, Educate

### Charge Statement

All jurisdictions should immediately identify existing flood-prone buildings/property, and notify and educate property owners about the flooding risk inherent on their property on an annual basis.

("Time to Complete" is from the time this report is adopted.)

\* Depending on the approval date of the new Flood Insurance Rate Maps (FIRM)

	Action Items	Lead Responsibility	Time to Complete
	a. Identify building owners within mapped floodplains.	Sedgwick County GIS	*6 months
	b. The Sedgwick County GIS Department should coordinate an effort with other GIS Departments to create a set of maps (and associated property-owner mail-out information), for the county and each municipal jurisdiction, that identifies all flood-prone property currently located within the FEMA 1:100 year floodplain areas.	County GIS	*6 months
	c. Utilize websites to provide links to existing educational materials pertaining to the risks associated with flood hazards, safety precautions, and techniques about how homeowners and business owners can take steps to reduce flood damage on their property, as well as, how development techniques can be used to reduce runoff from their property. Take advantage of opportunities to promote flood hazard public awareness information.	All jurisdictions	6 months - Ongoing
	d. Evaluate the use of the HAZUS software program with GIS to assist with flood loss estimations regarding potential physical damage and economic loss as a result of an event. Ask DWR to use measured depths of flooding for the 1998 Cowskin/Calfskin Creek flood to estimate damage values using HAZUS and compare them to flood damages obtained from claims made following that flood event.	County & City GIS Dept.	8 months
	e. Request all municipalities in the County to send an annual letter to property owners located in floodplains falling within their jurisdiction, informing them of the inherent flooding risks and encourage them to purchase flood insurance.	SCAC	*8 months
Participating Partners	Sedgwick County GIS Department; City GIS Departments, Emergency Management Departments, Public Works Departments, Floodplain Managers, Kansas Dept. of Agriculture, Division of Water Resources (DWR), Communications Departments, all jurisdictions, Sedgwick County Association of Cities (SCAC)		
Timeframe	Short-Term		
Funding Sources	FEMA's Hazard Mitigation Grant Program; the Pre-Disaster Mitigation Program, the Flood Mitigation Assistance Program, & the Community Assistance Program		

## Initiative #1b – Public Awareness: Training and Re-Evaluating Policy

### Charge Statement

Sedgwick County Code Enforcement, with the assistance of the City of Wichita and the SCAC, will ensure that local floodplain managers, insurance agents, realtors, lenders, engineering and surveying associations in Sedgwick County have adequate opportunities for training on an annual basis.

	Action Items	Lead Responsibility	Time to Complete
	a. Develop a more comprehensive list of constituents via Banker Associations, Board of Realtors, and Lenders lists.	Sedgwick County	1 month
	b. Provide necessary training in conjunction with Sedgwick County Association of Cities (SCAC) and State programs.	Sedgwick County	Annually
	c. Advertise training schedules via local websites and listservs.	Sedgwick County	Annually
	d. Provide training opportunities regarding State and Federal permitting requirements such as channel changes, floodplain fills, etc.	Sedgwick County	Annually
Participating Partners	Sedgwick County – (Lead-role); Sedgwick County Association of Cities (SCAC), City of Wichita, professional associations, Kansas Dept. of Agriculture, Division of Water Resources, surveyors, and floodplain management coordinators		
Timeframe	Annually / Short-Term		
Funding Sources	FEMA's Community Assistance Program - State Support Services		

## Initiative #2 – Continue to Acquire Flood-Prone Properties

### Background

Natural disasters are inevitable, and the emotional and financial costs of coping with natural disasters can become overwhelming. The overall cost of disasters to the United States has grown significantly. In fact, as of October 17, 2005, the United States has paid a total of \$14,767,343,744 in National Flood Insurance Claims since 1978. This figure does not include any Hurricane Katrina and Rita losses or any of the recent New England flooding. These claims will appear after 60 days following the filing of the claims adjustments. As of October 17, 2005, the State of Kansas has approximately 10,000 NFIP policies, of which the NFIP has paid a total of \$53,413,570 in claims since 1978. As a result, communities across Kansas and the nation are restructuring themselves to reduce the effects of natural disasters!

Below is a table that shows the total claim payment to Sedgwick County communities since 1978.

**Sedgwick County  
National Flood Insurance Program Claims Since 1978**

Community Name	Total Number of Claims Since 1978	Total Claim Payment Dollars Since 1978
Bel Aire	2	\$2,332
Clearwater	2	\$36,350
Colwich	3	\$24,016
Derby	40	\$119,217
Goddard	0	\$0
Haysville	4	\$10,171
Kechi	1	\$0
Mount Hope	0	\$0
Mulvane	43	\$404,701
Park City	0	\$0
Sedgwick County	142	\$1,700,610
Sedgwick, City of	70	\$237,857
Valley Center	4	\$129,023
Wichita	397	\$4,270,597
<b>Total</b>	<b>708</b>	<b>\$6,934,874</b>

*National Flood Insurance Program Data as of October 24, 2005*

Please keep in mind that nationally only 10% of people have flood insurance that need it. The table above is not portraying all properties that flood; it is only showing claim information from property owners that actually have flood insurance. For instance, the City of Wichita has a variety of reports and basin studies that identify numerous structures that flood, which are not reflected in the claims information displayed in the table above.



## **Initiative #2 – Continue to Acquire Flood-Prone Properties - Background Continued**

It is a known fact that flooding in Sedgwick County will occur in the future. It is also known that flooding, as opposed to tornados, is a natural disaster in which the geographic location of properties that are likely to be affected by flooding can be identified through topographic information and other detailed studies. Therefore, jurisdictions throughout Sedgwick County must implement strategies to reduce risk to property and lives at identified flood-prone properties within the floodplain.

Property acquisition is one option that can be used as an effective method of reducing the risk to lives and structures within the floodplain, because it is a permanent form of mitigation. FEMA has determined through National Flood Insurance Program insurance data that a select list of repetitive flood loss properties exhibit a level of risk that may be cost-effective to mitigate. Property acquisition can be a cost-effective method for properties that have experienced four or more insured flood losses, or have the highest severity of flooding (i.e., cumulative losses paid exceeds the property value), with some properties satisfying both criteria. There are approximately 10,000 such properties throughout the United States, which represent about one quarter of one percent of all NFIP policies. These properties have expected average annual losses of about \$80 million, which account for about 10% of expected total NFIP annual losses. In other words, these repetitive loss properties are an ongoing drain on our tax base, and it would be cost-beneficial for these properties to be acquired.

FEMA's mitigation funding priority is to assist local jurisdictions in acquiring repetitive loss property, and dedicating that property to an open space use. Although it may be impossible to find enough money for elevation, acquisition, demolition, or retrofitting all structures that need attention, local jurisdictions should prioritize such spending and target those properties that are most vulnerable and/or most likely to cause additional damage in a major flood.

Sedgwick County and the small cities of Sedgwick County currently acquire property as events occur, while the City of Wichita allocates funds to acquire repetitive loss properties on an annual basis. The Floodplain Management Task Force is recommending that this effort continue. It is not the intent of the Floodplain Management Task Force to recommend acquiring all at-risk property, but to encourage jurisdictions to evaluate the repetitive loss structures within their jurisdiction and determine whether property acquisition is a cost-effective mitigation method for these properties, and then prioritize spending and target those properties that are most vulnerable and/or most likely to cause additional damage in a major flood.



## Initiative #2 – Continue to Acquire Flood-Prone Properties

### Charge Statement

All jurisdictions should develop or continue existing programs of buying older, developed flood-prone properties (land & improvements), where reasonable flood mitigation techniques will not solve severe / persistent flooding problems. SCAC will on an annual basis encourage all municipalities to participate in long-term buyout programs.

	Action Items	Lead Responsibility	Time to Complete
	a. Each jurisdiction, in coordination with FEMA and Sedgwick County, will identify, track, prioritize, and map properties in need of a long-term buyout program.	All jurisdictions / District(s)	1 year
	b. Identify funding sources and allocate appropriate funds to cover ongoing property purchases.	All jurisdictions / District(s)	Continue existing programs and/or once the District(s) is formed, allocate funding as appropriate.
Participating Partners	FEMA, Municipalities, & Sedgwick County, District(s)/coordinating entity		
Timeframe	Wichita – Continue existing programs annually Sedgwick County & All other small cities – following each flood event		
Funding Sources	FEMA's - Hazard Mitigation Grant Program & Pre-Disaster Mitigation Program		



## Initiative #3 – Uniform Standards

### Background

The Floodplain Management Task Force determined that floodplain management issues are linked to and affected by drainage issues, and must be evaluated and dealt with using a comprehensive approach. Uniform drainage standards are needed for many reasons.

Communities in downstream locations, especially at the confluence of major rivers, cannot control development from other upstream jurisdictions within the watershed, which are affecting their level of vulnerability to flooding. A regional approach is needed to resolve a regional problem. If the problem is just pushed from one jurisdiction to the next, then the problem will never get resolved, and the problems downstream will only magnify. The Floodplain Management Task Force is recommending the development of a *drainage technical guidance manual* that is applicable for all municipalities in Sedgwick County, and potentially any other jurisdictions within the watersheds affecting Sedgwick County. The intent behind the development of a *drainage technical guidance manual* is to ensure uniformity in drainage standards and approaches used throughout the County, to ensure that each jurisdiction takes an appropriate level of responsibility for its actions, and to simplify the process among the development community by using one *drainage technical guidance manual* applicable for all municipalities in Sedgwick County.

In addition to the development of a *drainage technical guidance manual*, the Floodplain Management Task Force determined that the development and consideration of improved and *uniform floodplain development standards* is also an important component of floodplain management throughout Sedgwick County.

- 1) It has been determined that the minimal standards as required by the National Flood Insurance Policy may not be adequate to manage the flood problems experienced throughout Sedgwick County, so improvements to the existing minimal floodplain development regulations needs to be considered.
- 2) Merely acquiring flood-damaged properties after a disaster is not enough to preclude a recurrence of the same problem. Steps must be taken to ensure that floodplain property is utilized and/or designed in such a manner that minimal impact will occur if the property is flooded in the future. This might entail the consideration of easements, cluster zoning, low impact development techniques, and/or other effective subdivision design and development requirements for property within the floodplain. Without adequate floodplain development standards that meet the needs of our area, Sedgwick County's flooding problems will continue to magnify as development occurs, and the number of repetitive loss properties will continue to multiply.
- 3) Again, a regional approach is needed to resolve a regional problem. Communities in downstream locations cannot control upstream development within the watershed that affects their vulnerability to flooding. If the problem is just pushed from one jurisdiction to the next, then the problem will never get resolved, and the problems downstream will only magnify. The Floodplain Management Task Force is recommending the development of not only improved, but also *uniform floodplain development standards* for adoption by Sedgwick County, each of its municipalities and any other jurisdiction within the watersheds affecting Sedgwick County. The intent behind a uniform set of standards is to ensure that each jurisdiction takes an appropriate level of responsibility for its actions, to attempt to reduce the number of potential law suits associated with flooding issues, to simplify the process among the development community by requiring one standard, and to set a regional precedent for floodplain management that provides a greater level of protection than the minimum standard as required by FEMA.

## Initiative #3a - Uniform Standards - *Drainage Technical Guidance Manual*

### Charge Statement

The Floodplain Management Task Force will recommend representatives for the County and City Manager to appoint to a Technical Task Force within 3 months (from the date this report is adopted). The Technical Task Force will be charged with the responsibility to develop a *drainage technical guidance manual* that outlines uniform engineering practices and procedures for designing and checking the design of storm drainage systems under the rainfall and land characteristics typical of the Sedgwick County area. The manual will generally focus on water quantity concerns including conveyance, flow rates, and construction design parameters of stormwater systems for flood control. Storm control techniques should be evaluated and potentially included as an alternative or supplemental method to reduce runoff. The manual should be applicable for use by all jurisdictions, as a means of ensuring uniformity in drainage standards and approaches used throughout the County. The manual should be complete within 15 months.

	Action Items	Lead Responsibility	Time to Complete
	a. Establish a Technical Task Force to research existing information and develop a scope of work	County & City Manager	3 months
	b. Produce the <i>drainage technical guidance manual</i> .	Technical Task Force	1 year
Participating Partners	Sedgwick County, SCAC, engineers appointed by the County and City Managers		
Timeframe	Short-Term		
Funding Sources	To Be Determined		

## Initiative #3b - Uniform Standards - Floodplain Development Standards

### Charge Statement

The Technical Task Force will also be charged with developing a set of *uniform floodplain development standards* that should coincide with the development of the *drainage technical guidance manual*. These *uniform floodplain development standards* should provide a greater level of protection than the minimum standard as required by FEMA. The adoption of uniform standards for the region will help local governments create a level playing field for development and save design time for developers, while also enhancing the quality of future growth. The Technical Task Force will recommend the appropriate level of regulations needed to significantly reduce flood risks throughout Sedgwick County. These policies should be written in a format that allows the District(s) to approve the policies and then quickly distribute the *uniform floodplain development standards*, along with the *drainage technical guidance manual*, to each jurisdiction for consideration of adoption. The District(s) should encourage each jurisdiction to adopt the manual and policies within 6 months from the District's approval date.

(If the District(s) has not been formed, then the Technical Task Force will coordinate efforts with the Sedgwick County Association of Cities to distribute and encourage each jurisdiction to adopt the policies and the *drainage technical guidance manual* within 6 months of completion.)

	Action Items	Lead Responsibility	Time to Complete
	a. Resolve issues related to the modeling of existing floodplain conditions vs. future developed conditions.	District(s)	At the time the manual is complete
	b. Recommend appropriate level of regulations needed to significantly reduce potential flood damage and risks to humans.	Consultants	At the time the manual is complete
	c. Encourage each jurisdiction to adopt the <i>drainage technical guidance manual</i> and <i>floodplain development standards</i>	SCAC & District(s)/Coordinating Entity	6 months from the completion date
Participating Partners	Consultants, Sedgwick County Association of Cities (SCAC), Municipalities, Sedgwick County, Metropolitan Area Planning Dept., District(s)/Coordinating Entity		
Timeframe	Mid-Term		
Funding Sources	To Be Determined		

## Initiative #4 – Develop Governmental Framework

### Background

In order for Sedgwick County to successfully reduce the effects of flooding, it must organize itself to address the issue on a regional basis and must establish a permanent, dedicated funding source. The Sedgwick County area currently addresses stormwater and flooding issues at the local jurisdictional level and by watershed and drainage districts, some of which are inactive. The use of watershed districts to address these issues is growing in a few areas throughout South Central Kansas. In fact, the Andale Chamber of Commerce has been working for approximately three years to form a Cowskin Creek Watershed District, which is shown in purple on the map on page 4 of this report.

In an effort to evaluate the organizational structure and management practices of other communities with similar concerns, the Floodplain Management Task Force invited and heard presentations from two drainage and flood control districts/programs from the Denver Metropolitan Area and Johnson County, Kansas. In addition, the Floodplain Management Task Force heard a presentation from the Andale Chamber of Commerce to learn more about the purpose of the proposed Cowskin Creek Watershed District.

The Floodplain Management Task Force intends to further evaluate and utilize these models to develop the best, most effective and equitable organizational structure, tailored to Sedgwick County needs, and that has the capacity and funding capability to address flooding and stormwater management issues on a regional basis. Detailed questions have yet to be answered. Decisions regarding the exact organizational structure and management practices will be made by an Organizing Committee that will be formed following the acceptance of this report. This Committee will evaluate the means and methods to forming an Urban Drainage and Flood Control District, or possibly more than one district or entity that would coordinate flood control and stormwater management efforts. This District(s) or coordinating entity's role will be to develop or assist in developing and prioritizing a list of projects and potential funding sources, will develop strategies to justify a permanent funding source, will develop a three-year business plan, and will develop a strategy to work with existing and proposed watershed and drainage/levee districts.

Below are descriptions of the purpose and organizational structure of the Denver Urban Drainage and Flood Control District and the Johnson County Stormwater Management Program, as well as, information about the Andale Chamber of Commerce's proposed Cowskin Creek Watershed District:



## **Initiative #4 – Develop Governmental Framework - Background Continued**

### **Denver Urban Drainage and Flood Control District**

The Task Force invited David Lloyd, the Executive Director of the Denver Urban Drainage and Flood Control District, to make a presentation regarding the District's purpose, organizational structure, funding, and programming. The Denver Urban Drainage and Flood Control District was established by the Colorado legislature in 1969, for the purpose of assisting local governments in the Denver Metropolitan Area with multi-jurisdictional drainage and flood control problems. The District is an independent agency that assists Denver, parts of 6 surrounding counties, and parts or all of 33 incorporated cities and towns. The population of the District is approximately 2.3 million people.

#### Governing Body

The District is an independent agency governed by a twenty-three-member board of directors. Twenty-one members are locally elected officials (mayors, county commissioners, city council members) who are appointed to the board. In addition, the 21-member board selects two registered professional engineers that also serve on the board.

#### Funding

District funds come from four different property tax mill levies. The mill levies are earmarked for specific programs, and the mill levy cannot exceed one mill.

#### Staff

The concept of the District is to keep the staff small and to utilize private consultants and contractors as much as possible. As a result, the District operates a \$22 million annual program with only 21 full time employees and 8 part-time college student interns. The staff is responsible for management of all project funds; supervision of all work done by consulting engineers; and coordination of all planning, design, construction and floodplain management efforts with local governments.

#### Programs

The District operates six programs: Master Planning, Design and Construction, Maintenance, Floodplain Management, Information Services and Flood Warning, and South Platte River.

#### For Additional Information

The Floodplain Management Task Force gathered detailed information about each program as listed above. Additional information can also be obtained via the Denver Urban Drainage and Flood Control District website at [www.udfcd.org](http://www.udfcd.org).

## Initiative #4 – Develop Governmental Framework - Background Continued

### Johnson County Stormwater Management Program

In addition, Kent Lage, the Manager of the Johnson County Stormwater Management Program, also made a presentation regarding the Program's purpose, organizational structure, funding, and programming. Since 1990, through the Stormwater Management Program, Johnson County partnered with 20 cities to focus on reducing the risk of flooding.

As a part of this partnership, floodplains are being remapped with the goal to reduce flooding, minimize future property damage and protect the public's health and safety. The new floodplain maps help focus stormwater management planning on a large scale within watersheds, rather than on localized flooding problems. These maps assist Johnson County in assessing and addressing the risks associated with flooding and the benefits of renewing streams, creeks, rivers, and other water sources. Johnson County's risk management is accomplished through studies, plans, and projects that are funded through a small, dedicated sales tax that benefits property owners in every Johnson County city and township.

#### Governing Body

Stormwater management occurs at the city level, where staff and the public interact to make the choices that best serve their community. The Stormwater Management Advisory Council (SMAC) helps to coordinate stormwater efforts and advises the Board of County Commissioners on stormwater-related issues. Each city has one voting member on SMAC, which also has non-voting members, including stormwater experts, as well as, representatives from several of the cities and counties surrounding Johnson County.

#### Funding

In 1988, the Kansas Legislature authorized counties to adopt the 1/10th cent sales tax for the purpose of funding the stormwater management program. Johnson County was the only county to implement the tax. These funds allow Johnson County's Stormwater Management Program (SMP) to create a yearly stormwater management plan and provide 75 percent of funding for eligible projects in cities.

#### Goals of the Program

- Inform and educate the public about stormwater and flooding
- Studying and mapping floodplains
- Encouraging emergency preparedness for flood events
- Securing funding for stormwater projects
- Helping city and county officials coordinate efforts to address stormwater and runoff issues throughout the region

## Initiative #4 – Develop Governmental Framework - Background Continued

### Accomplishments

- To date, nearly \$100 million of stormwater studies, design and construction projects have been or are currently completed through the SMP and the cities.
- For the 150-plus projects, approximately \$75 million has been paid for by the 1/10th-cent sales tax.
- On average, SMP spends more than 90% of the total budget annually to study, design and construct stormwater projects and to fund county and regional stormwater quantity and water quality related projects. Improvements include widening open channels and replacing culverts and bridges, protecting the natural stream corridor and enhancing water quality.
- The SMP and the cities have spent more than \$9 million with an additional \$3 million state and federal assistance to buy out and remove flood-prone homes in the last 10 years
- Watershed studies are being completed to update the current Federal Emergency Management Agency (FEMA) regulatory floodplain maps. The primary goals of these studies are to identify floodplain boundaries for existing and future development and help reduce the creation of future stormwater problems in areas that are likely to flood as development occurs.
- As the county and cities update existing floodplain maps, engineers are developing conceptual plans to reduce the risk of flooding in buildings and on streets.

### For Additional Information

Please visit the following website <http://stormwater.jocogov.org> or contact Mr. Kent Lage 913-715-8333 or at [kent.lage@jocogov.org](mailto:kent.lage@jocogov.org) for additional information about Johnson County's Stormwater Management Program.



## **Initiative #4 – Develop Governmental Framework - Background Continued**

### **Andale Chamber of Commerce's Proposed Cowskin Creek Watershed District**

The Task Force invited Matt May, of the Andale Chamber of Commerce, to make a presentation regarding the proposed Cowskin Creek Watershed District. The Andale Chamber of Commerce has been working towards the development of the proposed Cowskin Creek Watershed District for the past 3 years. The proposed District would combine the Cowskin Creek Watershed, the Upper Dry Creek Watershed, and the Lower Dry Creek Watershed into a single basin area that would be managed by one managerial board. Cooperative agreements would be signed by all affected jurisdictions, which include Sedgwick County and the cities of Andale, Colwich, Maize, Goddard, and Wichita. This proposed area affects approximately 58,000 people.

#### Governing Body

The Andale Chamber of Commerce believes that the ideal make-up for the governing board of the Cowskin Basin should comprise of an eleven-member board with equal representation from each of the three watersheds including representation from the rural, incorporated and the transitional users of the watershed. The nine representatives should add to their voting membership, representatives from the Engineering or Public Works Departments for Wichita and Sedgwick County.

The eleven-member board would then have the option of creating ad hoc committee members to supplement their specific needs and allow for total representation from within the flood control community.

#### Funding

The proposed funding source to support the Cowskin Creek Watershed District is through both local, state and federal sources, including a mill levy, of which the Andale Chamber of Commerce would request the County Commission to consider passing a resolution to grant taxing authority.

#### For Additional Information

Additional information can also be obtained from Matt May with the Andale Chamber of Commerce or from Jim Michael of Watershed Specialists, LLC at 316-945-4045.

## Initiative #4a – Develop Governmental Framework: Organizing Committee to Establish a District

### Charge Statement

Within 3 months of acceptance of this report, the County and City Managers will create an “Organizing Committee” for purposes of formally establishing an Urban Drainage and Flood Control District(s) or coordinating entity to ensure an area-wide approach to addressing the management of drainage and floodplain issues. The District(s) or coordinating entity should be formed within 2 years.

	Action Items	Lead Responsibility	Time to Complete
	a. Create an "Organizing Committee."	County & City Manager	3 months
	b. Evaluate the means and methods to forming a District(s) or coordinating entity for Sedgwick County using existing relevant models	Org. Comm.	6 months
	c. Develop and prioritize a list of projects and potential funding sources	Org. Comm.	1 year
	d. Evaluate strategies to justify a permanent funding source	Org. Comm.	18 months
	e. Develop a three-year business plan	Org. Comm.	18 months
	f. Develop a strategy to work with existing and proposed watershed and drainage/levee districts to explain the County's goal of establishing an Urban Drainage and Flood Control District(s) or coordinating entity and develop an agreement with each district	Org. Comm.	2 years
	g. Obtain a formal agreement from each local jurisdiction to solidify commitment to the District(s)/coordinating entity and define responsibilities.	Org. Comm.	2 years
Participating Partners	Floodplain Management Task Force (which may become the Organizing Committee), all jurisdictions, SCAC, existing watershed and drainage districts, City and County Manager		
Timeframe	Short-Term		
Funding Sources	To Be Determined		

## Initiative #4b – Develop Governmental Framework: Permanent Funding Source

### Charge Statement

The Organizing Committee will identify options to develop a permanent funding source that is solely designated to address flooding issues throughout Sedgwick County within 18 months of the acceptance of this report. The Organizing Committee will encourage all appropriate parties to formally accept or adopt the permanent funding source option/recommendation within 3 years.

	Action Items	Lead Responsibility	Time to Complete
	a. Evaluate the use of the HAZUS Program as a tool to justify the need for a dedicated funding source by demonstrating potential losses/damage if no action is taken.	County & City GIS Dept.	18 months
	b. Evaluate strategies to justify a permanent funding source	Org. Comm.	18 months
	c. Encourage all appropriate parties to formally accept or adopt the permanent funding source option/recommendation	Org. Comm.	3 years
Participating Partners	Organizing Committee/District(s)/Coordinating Entity, All Sedgwick County Municipalities, Sedgwick County		
Timeframe	Mid-Term		
Funding Sources	To Be Determined		



## Initiative #5 – Conduct Basin Studies / Planning

### Background

The Floodplain Management Task Force determined that additional basin studies are needed in order to resolve regional and potentially complex flooding problems. Although these studies may vary widely in scope and detail, they will assist to identify problems and opportunities, inventory existing conditions and forecast future conditions, recommend potential solutions and programs, and estimate associated costs. Although the Federal Emergency Management Agency and the City of Wichita are conducting an update to the Flood Insurance Rate Maps (FIRM), these maps are not at the level of detail needed for construction or engineering projects. In order to justify and implement specific construction projects on a regional basis, basin studies will be needed to adequately address the flooding issues that are currently facing Sedgwick County.

The Floodplain Management Task Force is recommending that additional basin studies and planning be conducted after the formation of the Urban Drainage and Flood Control District(s)/coordinating entity. The District(s)/coordinating entity will be charged with the responsibility to define the study criteria and level of detail necessary, estimate costs and set study priorities by basin area. The District(s)/coordinating entity will conduct the study, report findings and develop mitigation strategies. These strategies should be cost effective, and as able, could address more than one problem at a time. Based on the study results, a variety of strategies should be considered that would utilize the floodplain areas as recreational/park land or other low-risk uses to ensure that future structural damage is kept to a minimal.

## Initiative #5 – Conduct Basin Studies / Planning

### Charge Statement

After formation of the Urban Drainage and Flood Control District(s) and development of a permanent funding source, the District(s) should conduct a comprehensive study of the basins within Sedgwick County in order to further identify drainage problems, flood-prone areas and potential mitigation strategies.

A potential work plan for the District(s) might include the following items:

(To Be Determined (TBD) by District(s))

	Action Items	Lead Responsibility	Time to Complete
	a. Define the study criteria and level of detail necessary by evaluating existing relevant studies	District(s)	TBD – by District(s) or Organizing Committee
	b. Estimate costs and set study priorities by basin area	District(s)	TBD – by District(s) or Organizing Committee
	c. Conduct study, report findings, and develop mitigation strategies	District(s)	TBD – by District(s)
	d. Consider mitigation strategies that are cost effective and that potentially address more than one problem at a time. Based on the study results, consider a variety of strategies that would utilize floodplain areas as recreational/park land or other low-risk uses to ensure that future structural damage is kept to a minimal.	District(s)	TBD – by District(s)
	e. Based on the study results, identify funding sources to implement mitigation strategies	District(s)	TBD – by District(s)
	f. Coordinate and continue efforts to update and increase the accuracy of existing FEMA map depictions of the floodways and floodplains within Sedgwick County.	District(s)	TBD – by District(s)
Participating Partners	Sedgwick County Urban Drainage and Flood Control District(s), Metropolitan Area Planning Department, Sedgwick County GIS		
Timeframe	Mid-Term / Long-Term		
Funding Sources	To Be Determined		

## Initiative #6 – Evaluate the Feasibility of the Community Rating System Program

### Background

The National Flood Insurance Program (NFIP) provides federally backed flood insurance to encourage communities to enact and enforce floodplain regulations. Since its inception in 1968, the program has been very successful in helping flood victims get back on their feet.

To be covered by a flood insurance policy, a property must be in a community that participates in the NFIP. To qualify for the program, a community adopts and enforces a floodplain management ordinance to regular development in flood hazard areas. The basic objective of the ordinance is to ensure such development will not aggravate existing flooding conditions and that new buildings will be protected from flood damage.

The NFIP has been successful in requiring new buildings to be protected from damage by a 100-year flood. However, flood damage still results from floods greater than the 100-year flood and from flooding in unmapped areas. Under the Community Rating System, there is an incentive for communities to do more than just regulate construction of new buildings to minimum national standards. Under the CRS, flood insurance premiums are adjusted to reflect community activities that reduce flood damage to existing buildings, manage development in areas not mapped by the NFIP, protect new buildings beyond minimum NFIP protection level, help insurance agents obtain flood data, and help people obtain flood insurance.

The objective of the CRS is to reward communities that are doing more than meeting the minimum NFIP requirements to help their citizens prevent or reduce flood losses. The CRS also provides an incentive for communities to initiate new flood protection activities. Communities in the National Flood Insurance Program (NFIP) that use the Community Rating System (CRS) receive a reduction of floodplain insurance premiums for actions they have taken to reduce flood losses. CRS communities are given credit points for activities that are beyond those required by the National Flood Insurance Program to:

- Reduce flood losses, i.e.
- Protect public health and safety
- Reduce damage to buildings and contents
- Prevent increases in flood damage from new construction
- Reduce the risk of erosion damage
- Protect natural and beneficial floodplain functions
- Facilitate accurate insurance ratings
- Promote the awareness of flood insurance

The Floodplain Management Task Force is interested in evaluating the feasibility of participating in the Community Rating System. Although the Floodplain Management Task Force is aware of the benefits that each jurisdiction would receive as a participant of the CRS Program, it is also aware that the program is paper intensive and would require staff time to manage and properly document CRS activities. The Floodplain Management Task Force recommends that a "CRS Committee" form to evaluate the feasibility of the program and upon findings, potentially encourage each municipality to apply and participate in the CRS Program. As an alternative option, the CRS Program could potentially be included as part of the proposed District's work plan.

## Initiative #6 – Evaluate the Feasibility of the Community Rating System Program

### Charge Statement

The County and City Manager should appoint within 3 months (of the acceptance of this report) a "CRS Committee" to continue efforts to evaluate the feasibility of participating in the Community Rating System as a method to improve floodplain practices and in order for NFIP policyholders to receive a premium discount.

	Action Items	Lead Responsibility	Time to Complete
	a. Establish a "CRS Committee" to evaluate the feasibility of all jurisdictions participating in the CRS Program.	County & City Manager	3 months
	b. Distribute findings to each local jurisdiction to inform of program's benefits	CRS Committee	1-2 year(s)
	c. Request that the State assist each interested jurisdiction in completing a CRS Program application	CRS Committee	2 years
	d. Once the District(s) is formed, consider assigning the responsibility of CRS Coordination to the District's Work Plan.	City & County Manager	Following establishment of the District(s)
Participating Partners	City and County Manager		
Timeframe	Mid-Term		
Funding Sources	To Be Determined		



## Initiative #7 - Maintain Flood Conveyance Channels

### Background

In the past, the governmental solution to flooding problems was to construct flood control improvements such as changing the natural course of Chisholm Creek through east Wichita into what has now become a concrete lined flood control channel. Protection from future flooding was obtained by designing the improvement to "convey" a theoretical flood through the community without damage. Generally, these flood control channels are publicly inspected and maintained to assure that they continue to provide the same level of "conveyance" of floodwaters for which they were designed. Beginning in the 1960s, a different approach to managing flood risks was adopted by governments across the United States, including Wichita and Sedgwick County. This new approach to reducing flood losses was based on knowing where the natural creeks, rivers, etc. caused flooding, then to zone those high risk areas as natural floodways to be preserved and not developed. The biggest challenge to this approach was to map the flood risk areas with enough scientific background to make the "flood maps" acceptable to the public, and not encroach upon private property rights.

Beginning in 1968, the Federal Government initiated a "Flood Insurance" Program, which made it possible for citizens to purchase a flood risk insurance policy to cover losses caused by floodwaters. As part of that program, the Federal Insurance Agency contracted with engineering firms to produce what became the scientific basis for mapping the nation's floodplains. Through the years between those early days of mapping floodplains and tabulating Base Flood Elevations for all major flooding sources and today, the local approach to preventing flood losses in this mapped Hazard Areas has been to keep development out of a Regulatory Floodway and to require elevation of structures permitted in the Floodway Fringe Areas. The basis for this management system is that no new flood risk structures will be built within the areas mapped by the Flood Insurance Studies. The assumption on which this management system is based, is that the ability of the Regulatory Floodway and Floodway Fringe areas will always be the same as it was when the Flood Insurance Study was completed. In other words, the "conveyance" or ability of the Floodway and Floodway Fringe to pass the Base Flood Discharge will be maintained or improved with the passage of time.

The challenges of the current management system is that there is no public agency responsible for inspecting the Federally mapped Flood Hazard Areas, and no local regulation, which requires private owners to maintain the "conveyance" used by the Flood Insurance Studies to calculate the Base Flood Elevation. In addition, the public maintenance of flood conveyance channels is often problematic due to access issues. For example, some property owners do not allow the City to access the channels for maintenance and clearing purposes. As a result one of two things occur, debris will either clog the channel and therefore increase the flooding impact in this area, or the debris will be pushed downstream to other property owners. These downstream property owners feel that the City should not place the responsibility of clearing the channels on the downstream property owner, especially if the debris is of an unsanitary nature or may create a safety concern.



## **Initiative #7 - Maintain Flood Conveyance Channels**

A community-wide approach to managing a Flood Insurance Program at the local level needs to include the resources, expertise and commitment to inspecting, reporting and requiring the work necessary to assure that the ability of the mapped Flood Hazard Areas to convey floodwaters with the same or improved capacity as contained in the Flood Insurance Studies. Thus "conveyance" must be one of the prime factors in maintaining the effectiveness of the Flood Insurance Studies in the community.

The Floodplain Management Task Force's intent is to utilize the Urban Drainage and Flood Control District(s)/coordinating entity to assist jurisdictions with this issue, but in the meantime, each jurisdiction should identify and prioritize the critical channels for public responsibility and then make decisions about how to gain access/authority to maintain the channel. The remaining property will be designated as the responsibility of the private property owner. In addition, each jurisdiction should develop a maintenance plan to ensure that adequate funding is available to properly maintain its stormwater infrastructure, for as growth occurs, the associated maintenance cost increases as well.

## Initiative #7 - Maintain Flood Conveyance Channels

### Charge Statement

Until the Urban Drainage and Flood Control District(s) is formed, each local jurisdiction should develop an interim plan of action for maintenance of flood conveyance channels as soon as possible.

	Action Items	Lead Responsibility	Time to Complete
	a. Identify and prioritize critical channels for public responsibility (Urban vs. Rural): <ul style="list-style-type: none"> <li>• Evaluate the use of the HAZUS program, as necessary.</li> <li>• Estimate costs.</li> <li>• Determine how to gain access/authority.</li> <li>• Develop a maintenance plan to ensure that adequate funding is available to properly maintain its stormwater infrastructure and ongoing costs of clearing problematic flood conveyance channels, and stabilizing erosion on stream banks and channels.</li> <li>• Re-evaluate channels and re-prioritize as necessary following major hazard events that may have altered critical areas.</li> </ul>	Each jurisdiction	1 year
	b. Designate the remaining property as the responsibility of private owners: <ul style="list-style-type: none"> <li>• Develop and promote incentive programs.</li> <li>• Develop regulations with enforcement measures and determine level of enforcement. (pro-active vs. passive)</li> </ul>	Each jurisdiction	1-3 years
	c. Evaluate alternative development techniques that would reduce runoff	District(s)/ Coordinating Entity	2 years after the formation of the District(s)
Participating Partners	All jurisdictions, District(s)/coordinating entity		
Timeframe	Action Item A - Short-Term; Action Item B - Mid-Term		
Funding Sources	All jurisdictions are responsible for costs-incurred to implement this initiative, until the District(s) and permanent funding source is established.		

# Tentative Timeline to Complete Tasks

Month to Complete	Year	Task	Initiative Number
December	2005	Adopt the Floodplain Management Task Force Final Report	
<b>Annually</b>			
*June	Annually updated	Identify property owners within mapped floodplain	1a
*June	Annually updated	Utilize GIS to obtain property owner addresses	1a
June	Annually updated	Utilize websites to provide links to educational materials	1a
*August	Annually	Request all jurisdictions to send a letter to property owners	1a
	Annually	Provide training	1b
	Annually	Advertise training schedules	1b
January	Annually	Develop a more comprehensive list of constituents via Associations	1b
	Annually	Continue existing buy-out programs	2
<b>2006</b>			
March	2006	Establish a Technical Task Force	3a
March	2006	Establish an Organizing Committee	4a
March	2006	Establish a CRS Committee to evaluate the feasibility of participating	6
June	2006	Evaluate the means and methods to forming a District(s)	4a
August	2006	Evaluate use of the HAZUS software program	1a
December	2006	Identify, track, prioritize and map properties in need of buy-out	2
December	2006	Develop Drainage Manual	3a
December	2006	Recommend appropriate level of regulations	3b
December	2006	Resolve issues related to the modeling of existing vs. future conditions	3b
December	2006	Develop & prioritize list of projects for the District(s)	4a
December	2006	Distribute findings pertaining to CRS and consider assigning CRS responsibility to the District(s), if feasible	6
December	2006	Identify and prioritize critical channels for public responsibility	7
December	2006-2008	Designate the remaining property as private property responsibility	7

\* Depending on the approval date of the new Flood Insurance Rate Maps (FIRM)

## Tentative Timeline to Complete Tasks - Continued

2007			
June	2007	Encourage jurisdictions to adopt a drainage manual and floodplain development standards	3b
June	2007	Develop a 3-yr business plan	4a
June	2007	Evaluate strategies to justify permanent funding source	4a
June	2007	Evaluate use of HAZUS to justify the need for a dedicated funding source	4b
June	2007	Evaluate strategies to justify permanent funding source	4b
December	2007	Develop strategy to work with existing & proposed watershed and drainage districts	4a
December	2007	Obtain a formal commitment from jurisdictions to the Urban Drainage and Flood Control District and define responsibilities	4a
2008			
December	2008	Encourage all appropriate parties to formally adopt the permanent funding source option	4b
2009			
December	2009	Evaluate alternative development techniques that would reduce runoff	7
	2009 or beyond	Basin Studies	5

## Implementation Oversight

The Floodplain Management Task Force recommendations will be implemented through the efforts of a series of task-oriented committees, as well as, through the efforts of the Sedgwick County Association of Cities, local engineers, City of Wichita, Sedgwick County, and small city staff, and State agency participation to name a few. In order to ensure that the tasks are carried-out as intended by the Floodplain Management Task Force, the Task Force recommends that they continue to meet on an as-needed basis to oversee and possibly assist in facilitating the implementation process.

## Future Study

- Research and analyze design methods that would limit channel maintenance and possibly address storm-water management/water quality issues at the same time through more restrictive (or flexible) subdivision regulations.